



# PREVENTION OF HOT WEATHER INJURIES

COL Tom Hayden  
LTC Steve Hawley

***WE BUILD INFANTRYMEN***



TRADOC--WHERE TOMORROW'S VICTORIES BEGIN!

# Purpose

To share information based on  
review of Heat Injury  
Prevention Procedures in the  
Infantry Training Brigade



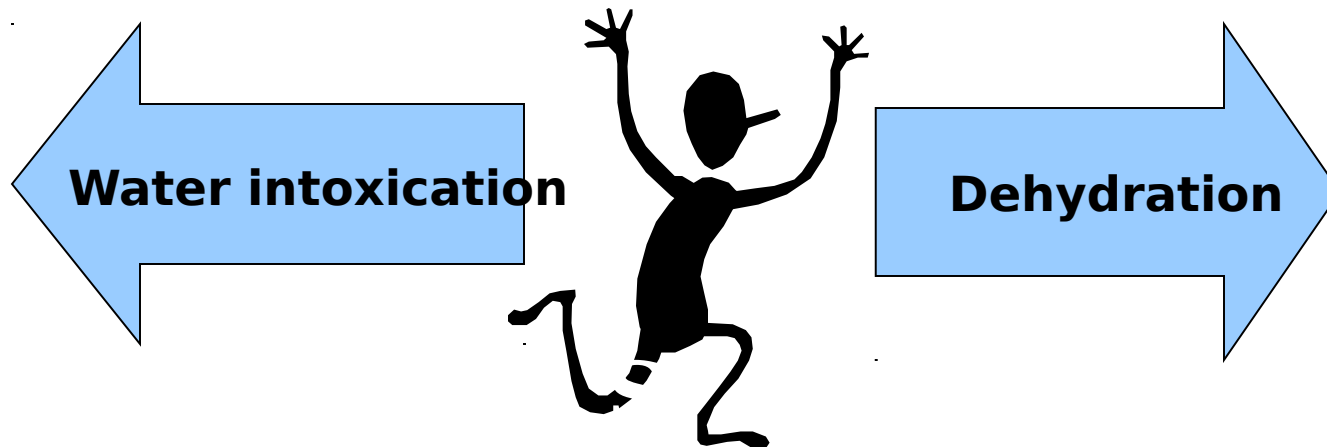
# Heat Injury Prevention Project

- **Educate the Leadership - Enhance understanding “The Why”!**
  - **How the Body Works (Dehydration vs Overhydration)**
  - **High Risk Soldiers**
- **Review/Revise Policy and Unit Procedures**
  - **Daily Risk Assessment - H.E.A.T. T.**
  - **Risk Management Worksheets**
  - **FB 7-R Heat Injury Cards**
  - **Water Consumption Tracking - Ogden Cards**
- **Enhance Diagnosis & Treatment Capability**
  - **Thermoscans - Core Body Temperature**
  - **Evacuation Criteria - CLS at collection point**
  - **Ice Sheet Cooling**



# OUR CHALLENGE

**Maintain a balanced state (euhydrated) in a inexperienced & non acclimatized soldier while conducting training IAW a POI that doesn't have a lot of flexibility built in for training during Heat Category conditions.**



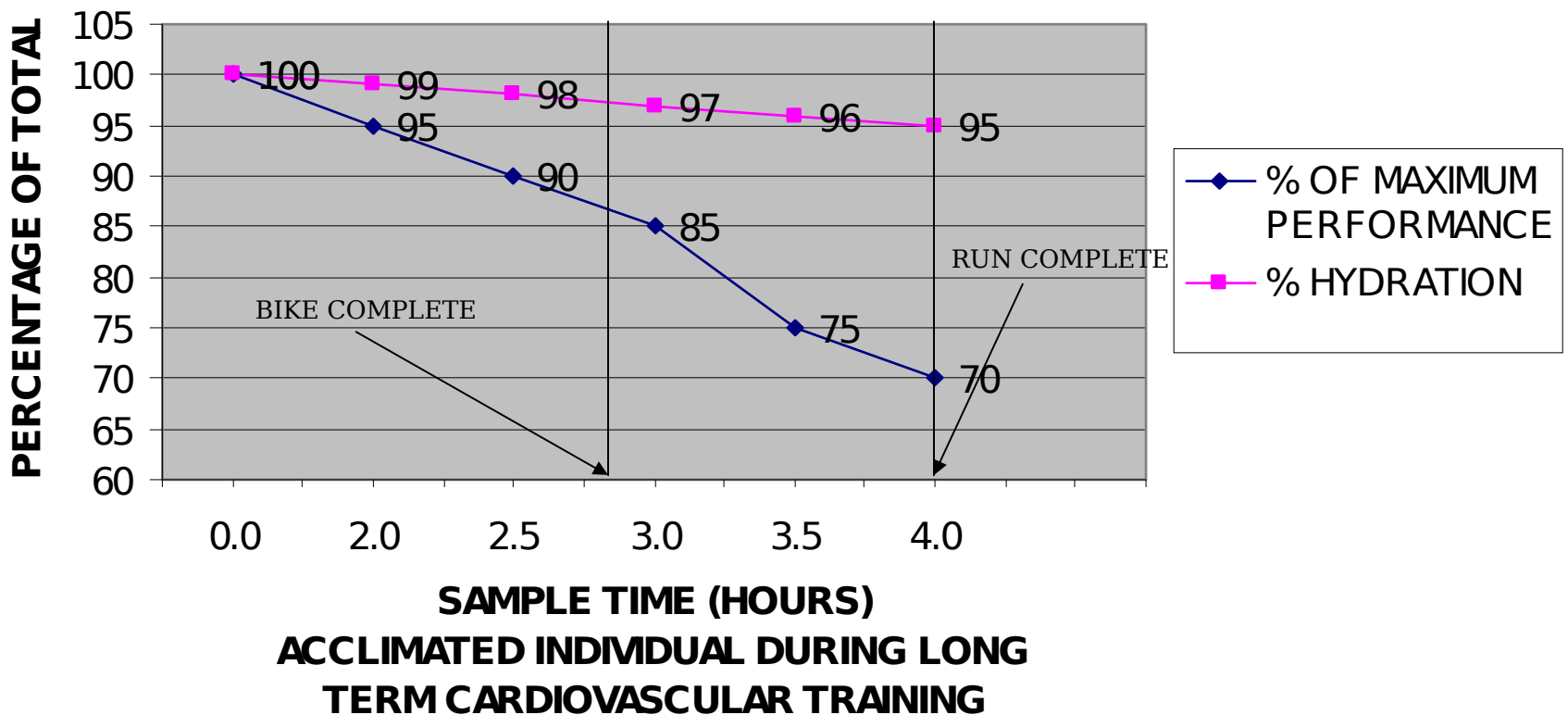
# Dehydration

- **Impairs physical and mental performance**
- **Impairs ability of body to cool itself**
- **Raises core temperature**
- **Increases heat stroke risk**



# DEHYDRATION AND PERFORMANCE OVER TIME

## PHYSICAL PERFORMANCE AND SAMPLE DEHYDRATION OVER TIME



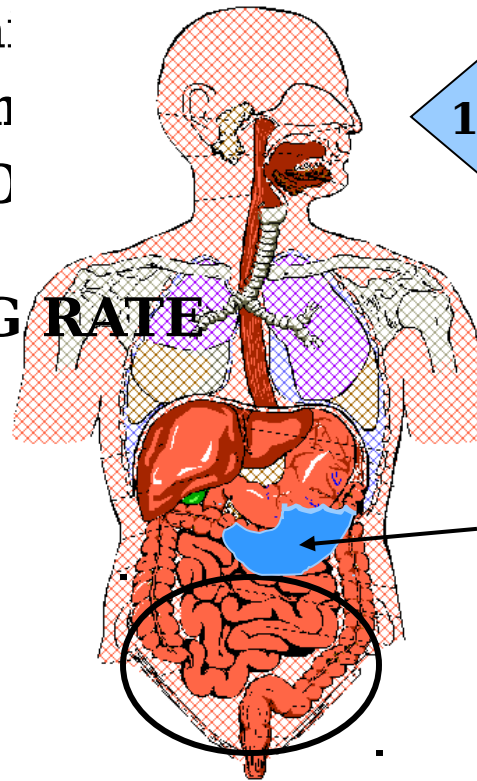
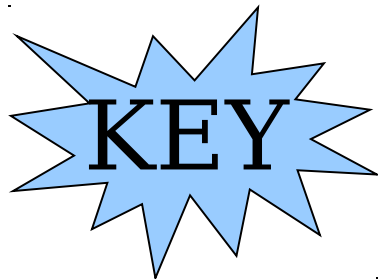
# Overhydration

- **Dilutes electrolytes in blood**
- **Stomach problems**
- **Confusion**
- **Brain swelling**
- **Seizures**
- **Death**



# HYDRATION-IN

- Regulated Fluid Intake based on Work Intensity & Heat Category
  - Right liquids at the right temperature (Water, Gatorade, Powerade)
  - Right mixture/concentration
  - Food - Extended Calorie
  - Osgood's
- GASTRIC EMPTYING RATE**



100-200 ml every 10-15 m

RATE A FUNCTION OF:

- temp of fluid 60°F optimal
- volume 400-600 ml creates ideal pH
- chemical composition: 200-210 mOsm/L

**600 ml optimal volume**





# Individual Risk Factors

- **Run time > 16 min/ 2 miles**
- **Body mass index > 22**
- **Medications- antihistamines, decongestants**
- **Poor overnight cooling**
- **Sickness**
- **Sunburn, large skin rash**



# Daily Risk Assessment (H.E.A.T.- T.)

**“Today’s heat injury is the result of training conducted on the two previous days.”**

- **H- heat category- 3 days**
- **E- exertion level- 3 days**
- **A- acclimatization**
- **T- temperature/ rest overnight**

• **T- Tables- water/work/rest**



TRADOC--WHERE TOMORROW'S VICTORIES BEGIN!

# Heat Related Symptoms

## Mild

- **Cramps in large muscles**
- **Dark urine**
- **Decreased performance**
- **Headache**
- **Poor concentration**

## Serious

- **Episodes of vomiting**
- **Unconsciousness**
- **Mental status changes (combative, lethargic, etc)**
- **Elevated Core temperature**

## Overhydrati

- **Clear urine**
- **Bloated stomach**
- **Vomiting**
- **Confusion**



# Core temperature

- **Ear thermo scanner in CLS bags**
- **2 temperature readings**
- **If core temp > 104- utilize iced sheets while awaiting ambulance**



# Treatment

## Mild Heat Symptoms

- **Soldier does not meet evacuation criteria**
- **Loosen clothing/ remove headgear**
- **Place in shade**
- **Fluids by mouth- 1 canteen/hr X 2**
- **Snack / Electrolyte beverage**



# Heat Injury Evacuation Criteria

- **2 or more episodes of vomiting**
- **Unconsciousness > 1 minute**
- **Mental status changes (combative, lethargic, confusion)**
- **Core temperature > 104 F**
- **Mild symptoms do not improve after 30 Min's**



# Treatment

## Serious Heat Symptoms

- **Call for Evacuation**
- **Rapid Cooling**
  - **Undress to briefs**
  - **Wrap in iced sheets**
  - **Then loosen sheets and fan**
  - **Stop cooling when core temp 100 or Soldier is shivering**
- **Administer IV after previous 2 tasks**
  - **1/2 Bag Only**



# PREVENTION OF HOT WEATHER INJURIES

Questions?

